

Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A passenger accommodation unit for a vehicle, ~~particularly an aircraft, which is including a seat assembly~~ adapted to provide self-contained, individual seating and sleeping accommodation for a passenger, said seat assembly comprising:

supporting structure for supporting said unit off the floor of a vehicle;

one or more movable passenger-bearing, structural components; and

means for connecting said movable, structural components to said structure such that said components can be selectively moved between a seat configuration, in which a plurality of passenger-bearing surfaces on said one or more structural, movable components or said supporting structure form a seat for the passenger, and a bed configuration, in which a plurality of said bearing surfaces are disposed substantially coplanarly and substantially contiguously to form a bed for the passenger;

wherein at least one of said movable components is double-sided, comprising first and second opposite sides, one of said sides having a first seat surface that forms part of the seat in said seat configuration, and the other side having a second bed surface that forms part of said bed in said bed configuration, said at least one double-sided movable component being a back-rest component that is connected to said supporting structure such that it can be selectively pivoted between a first generally upright position, in which said first surface is arranged to form part of said seat, and a second prone position in which said second surface is arranged to form part of said bed, and

wherein one or more of said passenger-bearing surfaces comprise a bed extension surface, separate from said second bed surface of said moveable component, which bed extension surface is positioned or deployable to be positioned rearwardly of the seat to form part of said bed in said bed configuration.

2. (Original) A passenger accommodation unit as claimed in claim 1, wherein said one or more of said passenger-bearing surfaces comprise a rear extension surface behind said back-rest component, and wherein said back-rest component is connected to the structure such that in said prone position said second bed surface and said rear extension surface are substantially coplanar.

3. (Original) A passenger accommodation unit as claimed in claim 2, wherein said back-rest component is spaced forwardly of said rear extension surface in said prone position and a movable infill component is provided that is connected to said structure such that it is movable between a stowed position and a deployed position, which infill component comprises a passenger-bearing infill surface that extends between said back-rest component and said rear extension surface when said infill component is deployed, such that said rear extension surface, infill surface and second surface form a substantially continuous surface, and wherein means are provided for moving the infill component from

said stowed position to said deployed position when the back-rest component is moved from the upright position to the prone position.

4. (Original) A passenger accommodation unit as claimed in claim 1, wherein said second bed surface of said back-rest component is generally horizontal in said second prone position.

5. (Original) A passenger accommodation unit as claimed in claim 1, wherein one or more of said passenger-bearing surfaces comprise a seat-pan, and wherein said back-rest component is connected to the structure such that, in the second prone position, the backrest component overlays the seat-pan.

6. (Original) A passenger accommodation unit as claimed in claim 5, wherein said seat-pan comprises one or more of said movable components which are connected to said structure for movement in a direction having a vertical component between an upper deployed position and a lower stowed position, and wherein seat-pan moving means are provided for moving the seat-pan from the upper deployed position to the lower stowed position when the back-rest component is moved from the upright position to the prone position.

7. (Currently Amended) A passenger accommodation unit as claimed in claim 1, wherein one or more of said passenger-bearing surfaces comprise a forward bed

extension surface, which forward bed extension surface is positioned or deployable to be positioned forwardly of the seat in said seat configuration.

8. (Currently Amended) A passenger accommodation unit as claimed in claim 7, wherein said forward bed extension surface is positioned or is deployable to be positioned forwardly of the seat-pan component such that, in the seat configuration, said forward bed extension surface may serve as a foot-rest.

9. (Original) A passenger accommodation unit as claimed in claim 1, wherein said back-rest component is connected to the structure such that in said prone position said second bed surface and said bed extension surface form a substantially continuous surface.

10. (Original) A passenger accommodation unit as claimed in claim 1, wherein said back-rest component is connected to the structure for selective movement between an upright position and a fully reclined position in which the back-rest component is pivoted rearwardly relative to the upright position.

11. (Original) A passenger accommodation unit as claimed in claim 10, wherein one or more of said movable components comprise a seat pan which is connected to the supporting structure such that it can be pivoted relative to the back-rest component between a first position and a second position, and wherein means are provided for pivoting the seat pan progressively from the first position to the second position as the back-rest component is pivoted rearwardly from the upright position to the fully reclined position.

12. (Original) A passenger accommodation unit as claimed in claim 1, wherein said one side of the double-sided movable component carries layer of foam padding having a contoured surface that is shaped for use as a seat component and said other side carries a layer of foam padding having a substantially flat surface for use as part of a bed.

13. (Currently Amended) A passenger seat assembly for a passenger vehicle, ~~particularly an aircraft,~~ which assembly is adapted to provide seating and sleeping accommodation for a passenger, said seat assembly ~~unit~~ comprising:

supporting structure adapted for supporting the assembly off the floor of the vehicle;

a plurality of seat elements including a seat-pan element and a back-rest element, said back-rest element comprising first and second opposite sides, one of said sides having a first seat surface and the other side having a substantially flat second bed surface;

a seat movement mechanism adapted for connecting the seat elements to the supporting structure, said seat movement mechanism including a seat conversion submechanism adapted to allow and control movement of the seat elements such that the seat elements can be selectively moved between a seat configuration and a bed configuration; and

one or more auxiliary accommodation elements connected to or forming part of said supporting structure and being positioned or being deployable to be positioned juxtaposed said seat, the or each auxiliary accommodation element having an auxiliary, substantially flat, passenger-bearing surface that is separate from said flat second bed surface of said back-rest element;

said seat conversion sub-mechanism being adapted for controlling movement of the back-rest element such that said back-rest element is pivotable from a first upright position in the seat configuration, in which said first seat surface of the back-rest element cooperates with said seat-pan element to form a seat for the passenger, to a second prone position in the bed configuration, in which the second bed surface of the back-rest element cooperates with one or more of said auxiliary passenger-bearing surfaces to form a substantially coplanar, continuous extended bed surface for the passenger, one or more of said auxiliary accommodation elements forming the extended bed surface being positioned or being deployable to be positioned rearwardly of the seat.

14. (Original) A passenger seat assembly as claimed in claim 13, wherein said seat movement mechanism is adapted to control movement of said seat-pan element and said back-rest element in relation to each other.

15. (Original) A passenger seat assembly as claimed in claim 13, wherein said seat conversion sub-mechanism is adapted to control movement of said back-rest element such that as the back-rest element is moved from the first position to the second position said back-rest element pivots forwardly over the seat-pan element, and said back-rest element in the second prone position is superposed over the seat-pan element.

16. (Original) A passenger seat assembly as claimed in claim 15, wherein said seat conversion sub-mechanism is adapted to control movement of the seat-pan element such that as the back-rest element is moved from the first upright position to the second prone position said seat-pan element is caused to move downwardly relative to the supporting structure.

17. (Original) A passenger seat assembly as claimed in claim 13, wherein said seat movement mechanism further comprises a seat reclining sub-mechanism which is adapted to allow said seat to be selectively reclined from an upright position to a fully reclined position, said seat reclining mechanism being adapted to control movement of the back-rest element such that as the seat is reclined from the upright position to the fully reclined position, said back-rest element is rocked rearwardly from the first upright position to a third fully reclined position.

18. (Original) A passenger seat assembly as claimed in claim 17, wherein said seat reclining submechanism is adapted to control movement of said seat-pan element such that as the backrest element is rocked rearwardly from the first upright position to the third fully reclined position said seat-pan element is caused to tilt rearwardly.

19. (Currently Amended) A passenger seat assembly as claimed in claims 13, wherein one or more of said forward auxiliary accommodation elements are positioned or deployable to be positioned forwardly of the seat.

20. (Currently Amended) A passenger seat assembly as claimed in claim 19, wherein one or more of said forward auxiliary accommodation elements comprise a foot-rest positioned or deployable to be positioned forwardly of said seat, and wherein in said second position the second bed surface of the back-rest element is disposed substantially coplanarly and contiguously with said foot-rest.

21. (Original) A passenger seat assembly as claimed in claim 13, wherein one or more of said auxiliary elements comprise a fixed, rear extension surface positioned rearwardly of the seat.

22. (Original) A passenger seat assembly as claimed in claim 21, wherein said seat comprises a movable infill element and said seat conversion sub-mechanism is adapted to allow movement of said infill component between a lower, stowed position and a raised,

deployed position in which said infill element extends substantially coplanarly and contiguously with said second surface of said back-rest element in said second prone position and said rear extension surface, thereby to form a substantially flat, extended bed surface, and wherein said seat conversion sub-mechanism is further adapted to control movement of said infill component such that said infill component is caused to moved from said stowed position to said deployed position when the back-rest element is moved from said first upright position to said second prone position.

23. (Original) A passenger seat assembly as claimed in claim 13, wherein said one side of the back-rest component carries a layer of foam padding having a contoured first surface that is adapted to form a back-rest or part of a back-rest of a seat and the other side carries a layer of foam padding having a substantially flat second surface that is adapted to form part of a bed.

24. (Original) A passenger seat assembly as claimed in claim 13, wherein said seat conversion sub-mechanism comprises a seat holding device that is pivotably connected to said supporting structure for rocking movement between a first seat position and a second bed position, said back-rest element being mounted on said holding device such that said backrest element can be pivoted from said first upright position to said second prone position by rocking said holding device from said first position to said second position, and releasable locking means adapted for selectively locking said holding device in said first and second positions.

25. (Original) A passenger seat assembly as claimed in claim 24, wherein said seat-pan element is pivotably mounted on said holding device, the arrangement being such that when said holding device is rocked from the first position to the second position the seat-pan element is caused to move downwardly from an upper deployed position to a lower stowed position and the back-rest element rocks forwardly over the seat-pan element such that in said second prone position the back-rest element overlays the seat-pan element.

26. (Original) A passenger seat assembly as claimed in claim 25, wherein said seat-pan element comprises a front end and a rear end relative to said back-rest element, said seat-pan element being pivoted to the holding device at or towards said rear end, and wherein said seat movement mechanism further comprises a seat-pan supporting device for supporting the front end of the seat-pan element.

27. (Original) A passenger seat assembly as claimed in claim 26, wherein said seat-pan supporting device comprises a slideway disposed beneath said seat-pan element, a leg member having two opposing ends, one of said ends being pivotably connected to the front end of the seat-pan element, the other end being slidably engaged in said slideway, and a drag-strut connecting said other end of the leg member to the holding device; the arrangement being such that as the holding device is rocked from the first position to the second position, the drag-strut is moved to cause or allow said other end of the leg member to slide in said slideway, the slideway having a profile such that as the holding device moves from the first position to the second position, the leg-member is moved downwardly, thereby causing or allowing the front end of the seat-pan element to move progressively downwardly.

28. (Original) A passenger seat assembly as claimed in claim 24, wherein said seat movement mechanism further comprises a seat reclining sub-mechanism adapted to allow said seat elements to be selectively moved between an upright position and a fully reclined position, when said holding device is disposed in said first seat position.

29. (Original) A passenger seat assembly as claimed in claim 28, wherein said seat reclining submechanism comprises a curvilinear track attached to the holding device and having two opposing track-ends and a plurality of spaced track-followers attached to said back-rest element, said track-followers being adapted to engage in and slide along said track, the track being configured such that as the track-followers slide along the track from one end to the other the back-rest element is caused to rock progressively rearwardly from the first upright position to a third fully reclined position.

30. (Original) A passenger seat assembly as claimed in claim 29, wherein said seat reclining submechanism further comprises selectively operable, bi-directional driving device for translationally moving said back-rest element relative to the holding device, the arrangement being such that operation of said driving means device said track-followers to slide along said curvilinear track, thereby causing the back-rest element to rock progressively between said first and third positions.

31. (Original) A passenger seat assembly as claimed in claim 30, wherein said driving device comprises a linear actuator connected between said back-rest element and said holding device.

32. (Original) A passenger seat assembly as claimed in claim 31, wherein said linear actuator comprises a linear screw fixedly secured to said holding device, a screw-engaging device pivotably connected to said back-rest element and a selectively operable, bi-directional motor carried by said holding device for rotatably driving said linear screw.

33. (Original) A passenger seat assembly as claimed in claim 31, wherein said seat-pan element has a front end and a rear end relative to said back-rest element and said linear actuator is pivotably connected between said holding device and said seat-pan element, said linear actuator being attached to the seat-pan element at or towards said rear end, for driving said seat-pan element progressively downwards relative to the supporting structure from a first upper position when said back-rest element is in said first upright position to a second lower position when said back-rest element is in said third fully reclined position, and wherein seat movement mechanism further comprises a seat-pan supporting device for supporting the front end of the seat-pan element as the rear end of the seat-pan element is driven downwardly, thereby causing the seat-pan to tilt progressively rearwardly as the back-rest element rocks rearwardly.

34. (Original) A passenger seat assembly as claimed in claim 31, wherein said linear actuator is connected to said back-rest element through a lost motion device to allow a small degree of relative translational movement between said seat-pan and back-rest elements.

35. (Original) A passenger seat assembly as claimed in claim 24, wherein said seat conversion sub-mechanism further comprises a selectively operable, bi-directional actuator for rocking said holding device between said first seat position and said second bed position.

36. (Original) A passenger seat assembly as claimed in claim 35, wherein said actuator comprises a four bar double-rocker linkage, said linkage comprising a rocker and a coupler link connected intermediate said holding device and said rocker, and selectively operable, bidirectional rotary drive device for operating said rocker, the arrangement being such that operation of said rocker causes rocking of said holding device between said first and second positions.

37. (Original) A passenger seat assembly as claimed in claim 36, wherein said rotary drive device comprises a motor, a worm-gear and a worm-wheel, wherein said worm wheel is fixedly secured to said rocker.

38. (Original) A passenger seat assembly as claimed in claim 37, wherein said worm-gear is disengageable from said worm-wheel to allow said holding device to be rocked manually between said first and second positions.

39. (Original) A passenger seat assembly as claimed in claim 35, wherein said actuator is attached to the supporting structure beneath said seat elements.

40. (Original) A passenger seat assembly as claimed in claim 24, wherein said holding device comprises two spaced side members disposed respectively to opposing sides of said backrest element.

41. (Original) A passenger seat assembly as claimed in claim 40, wherein said coupler link is connected to said side members below the pivot between the holding device and the supporting structure.

42. (Currently Amended) A passenger seat assembly as claimed in claim 37, wherein in the first position the rocker and coupler link subtend an angle of 180° to form a strut, whereby forces applied to the holding device are transmitted ~~linealy~~linearly through the rocker, and are not transmitted rotationally to the worm-screw.

43. (Original) A passenger seat assembly as claimed in claim 38, wherein said worm-gear is coupled to said worm-wheel through a break-link device which is adapted to prevent inadvertent disengagement of the worm-gear from the worm-wheel, but can be selectively operated to allow the worm-gear to be disengaged from the worm-wheel.

44. - 68. (Cancelled)

69. (New) A passenger accommodation unit for a vehicle including a seat assembly adapted to provide self-contained, individual seating and sleeping accommodation for a passenger, said seat assembly comprising:

one or more movable passenger-bearing, structural components selectively movable between a seat configuration, in which a plurality of passenger-bearing surfaces on said one or more structural, movable components form a seat for the passenger, and a bed configuration, in which a plurality of said bearing surfaces are disposed substantially coplanarly and substantially contiguously to form a bed for the passenger,

wherein at least one of said movable components is double-sided, one of said sides having a seat surface that forms part of the seat in said seat configuration, and the other side having a bed surface that forms part of said bed in said bed configuration, said at least one double-sided movable component being a back-rest component such that it can be selectively pivoted between a generally upright position, in which said seat surface is arranged to form part of said seat, and a second prone position in which said bed surface is arranged to form part of said bed, and wherein one or more of said passenger-bearing surfaces comprise a bed extension surface, which bed extension surface is positioned or deployable to be positioned rearwardly of the seat to form part of said bed in said bed configuration; and

a movable infill component movable between a stowed position and a deployed position, which infill component comprises a passenger-bearing infill surface that extends between said back-rest component and said bed extension surface when said infill component is deployed, such that said bed surface of said back-rest component, bed extension surface, and infill surface form a substantially continuous surface.

70. (New) A passenger accommodation unit for a vehicle including a seat assembly adapted to provide self-contained, individual seating and sleeping accommodation for a passenger, said seat assembly comprising:

one or more movable passenger-bearing, structural components selectively movable between a seat configuration, in which a plurality of passenger-bearing surfaces on said one or more structural, movable components form a seat for the passenger, and a bed configuration, in which a plurality of said bearing surfaces are disposed substantially coplanarly and substantially contiguously to form a bed for the passenger;

wherein at least one of said movable components is double-sided, one of said sides having a seat surface that forms part of the seat in said seat configuration, and the other side having a bed surface that forms part of said bed in said bed configuration, said at least one double-sided movable component being a back-rest component such that it can be selectively pivoted between a generally upright position, in which said seat surface is arranged to form part of said seat, and a second prone position in which said bed surface is arranged to form part of said bed, and wherein one or more of said passenger-bearing surfaces comprise a bed extension surface, which bed extension surface is positioned or deployable to be positioned rearwardly of the seat to form part of said bed in said bed configuration;

wherein one or more of said passenger-bearing surfaces comprise a seat-pan, said seat-pan being moveable between an upper deployed position and a lower stowed position when the back-rest component is moved from the upright position to the prone position.

71. (New) A passenger accommodation unit for a vehicle including a seat assembly adapted to provide self-contained, individual seating and sleeping accommodation for a passenger, said seat assembly comprising:

one or more movable passenger-bearing, structural components selectively movable between a seat configuration, in which a plurality of passenger-bearing surfaces on said one or more structural, movable components form a seat for the passenger, and a bed configuration, in which a plurality of said bearing surfaces are disposed substantially coplanarly and substantially contiguously to form a bed for the passenger;

wherein at least one of said movable components is double-sided, one of said sides having a seat surface that forms part of the seat in said seat configuration, and the other side having a bed surface that forms part of said bed in said bed configuration, said at least one double-sided movable component being a back-rest component such that it can be selectively pivoted between a generally upright position, in which said seat surface is arranged to form part of said seat, and a second prone position in which said bed surface is arranged to form part of said bed;

wherein said back-rest component is selectively moveable between an upright position and a fully reclined position in which the back-rest component is pivoted rearwardly relative to the upright position;

wherein one or more of said movable components comprise a seat pan which is pivotable relative to the back-rest component between a first position and a second position as the back-rest component is pivoted rearwardly from the upright position to the fully reclined position.

72. (New) A passenger seat assembly for a passenger vehicle adapted to provide seating and sleeping accommodation for a passenger, said seat assembly comprising:

supporting structure adapted for supporting the assembly off the floor of the vehicle;

a plurality of seat elements including a seat-pan element and a back-rest element, said back-rest element comprising opposite sides, one of said sides having a seat surface and the other side having a bed surface,

said back-rest element being pivotable from an upright position, in which said seat surface of the back-rest element cooperates with said seat-pan element to form a seat for the passenger, to a prone position, in which the bed surface of the back-rest forms a substantially coplanar, continuous extended bed surface for the passenger; and

a seat holding device that is pivotably connected to said supporting structure for rocking movement between a seat position and a bed position, said back-rest element being mounted on said seat holding device such that said back-rest element can be pivoted from said upright position to said prone position by rocking said holding device from said seat position to said bed position, and releasable locking means adapted for selectively locking said holding device in said seat position and said bed position.